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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,515	12/21/2000	Andreas Arning	STL000011US2	3164
687	7590	10/06/2004	EXAMINER	
ALBERT P. SHARPE, III FAY, SHARPE, BEALL, FAGAN, MINNICH & MCKEE 1100 SUPERIOR AVENUE, SUITE 700 CLEVELAND, OH 44114			WONG, LESLIE	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,515

Applicant(s)

ARNING ET AL.

Examiner

Leslie Wong

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55-87 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55-87 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 30 June 2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June 2004 has been entered.

Information Disclosure Statement

2. Applicants' Information Disclosure Statement, filed 30 June 2004, has been received, entered into the record, and considered. See attached form PTO-1449.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 55-59, 61-65, and 67-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al.** (U.S. Patent 5,727,199) in view of **Ho et al.** (Range Queries in OLAP Data Cubes).

Regarding claims 55, 61, and 67, **Chen et al.** teaches a method, an apparatus and an article of manufacture of accessing a subject multi-dimensional database stored on a data store connected to a computer, comprising:

- a). receiving an indication of a number of features of said subject multi-dimensional database to be identified (col. 3, lines 56-61 and col. 4, lines 30-34);
- b). performing feature identification to identify the indicated number of features (col. 4, line 60 – col. 7, line 30); and
- c). **Chen et al.** does not clearly teach a step of creating an index for the subject multi-dimensional database using the identified number of features.

Ho et al., however, teaches creating an index for the subject multi-dimensional database using the identified number of features (page 73, col. 2, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to create an index for the subject multi-dimensional database using the identified number of features in order to accurately retrieve desired information quickly and effectively.

Regarding claims 56, 58-59, 62, 64-54, 68, and 70-71, **Ho et al.** further teaches a step wherein creating the index comprises creating a multi-dimensional database that is derived from the subject multi-dimensional database (page 73, col. 2, first paragraph).

Regarding claims 57, 63, and 69, **Chen et al.** further teaches wherein receiving the number of features to be identified comprises receiving a parameter value (col. 3, lines 54-61).

5. Claims 60, 66, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al.** (U.S. Patent 5,727,199) in view of **Ho et al.** (Range Queries in OLAP Data Cubes) as applied to claims 55-59, 61-65, and 67-71 and in further view of **Agrawal et al.[2]** (U.S. Patent 6,094,651).

Regarding claims 60, 66, and 72, **Chen et al.** and **Agrawal et al.**, do not teach a step wherein the index stores deviation values for each of the identified number of features.

However, **Agrawal et al.[2]** teaches a step for locating data anomalies in a K dimensional data cube (Fig. 6; col. 2, line 38 - col. 3, line 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the feature of exploring the performance data for finding regions of anomalies in the data as taught by **Agrawal et al.[2]** in order to identify problem areas and/or new opportunities (col. 1, lines 34-36).

6. Claims are 73-76, 78-81, and 83-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al.** (U.S. Patent 5,727,199) in view of **Ho et al.** (Range Queries in OLAP Data Cubes), and further in view of **Information Builders Inc.**

(Information Builders ready with Fusion multi-dimensional database for warehousing, executive information systems).

Regarding claims 73, 78, and 83, **Chen et al.** teaches a method of accessing a subject multi-dimensional database stored on a data store connected to a computer, comprising:

- a). receiving an indication of a number of features of said subject multi-dimensional database to be identified (col. 3, lines 56-61 and col. 4, lines 30-34);
- b). performing feature identification to identify the indicated number of features (col. 4, line 60 – col. 7, line 30); and
- c). **Chen et al.** does not clearly teach a step of creating an index for the subject multi-dimensional database using the identified number of features, wherein the index comprises a second multi-dimensional database that is derived from the subject multi-dimensional database.

Ho et al., however, teaches creating an index for the subject multi-dimensional database using the identified number of features (page 73, col. 2, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to create an index for the subject multi-dimensional database using the identified number of features in order to accurately retrieve desired information quickly and effectively.

Chen et al. and **Agrawal et al.**, do not explicitly teach wherein the index comprises a second multi-dimensional database that is derived from the subject multi-dimensional database.

Information Builders Inc., however, teaches wherein the index comprises a second index multi-dimensional database (§ 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to store the index for the subject multi-dimensional database separately because doing so would facilitate updating of multi-dimensional data and increase the system performance.

Regarding claims 74, 79, and 84, **Chen et al.** further teaches wherein receiving the number of features to be identified comprises receiving a parameter value (col. 3, lines 54-61).

Regarding claims 75, 80, and 85, **Chen et al.** further teaches wherein performing feature identification comprises generating an ordered list of multi-dimensional points (col. 5, lines 38-41).

Regarding claims 76, 81, and 86, **Chen et al.** further teaches wherein further comprising creating the index using the list of multidimensional points (col. 4, lines 6-10).

7. Claims 77, 82, and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al.** (U.S. Patent 5,727,199) in view of **Ho et al.** (Range Queries in OLAP Data Cubes) and **Information Builders Inc.** (Information Builders ready with Fusion multi-dimensional database for warehousing, executive information systems) as applied to claims 73-76, 78-81, and 83-86 and in further view of **Agrawal et al.[2]** (U.S. Patent 6,094,651).

Regarding claims 77, 82, and 87, **Chen et al.**, **Agrawal et al.**, and **Information Builders Inc.** do not teach a step wherein the index stores deviation values for each of the identified number of features.

However, **Agrawal et al.[2]** teaches a step for locating data anomalies in a K dimensional data cube (Fig. 6; col. 2, line 38 - col. 3, line 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the feature of exploring the performance data for finding regions of anomalies in the data as taught by **Agrawal et al.[2]** in order to identify problem areas and/or new opportunities (col. 1, lines 34-36; col. 2, lines 20-26 and 38-43).

Response to Argument

8. Applicant's arguments with respect to claims 55-87 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (703) 305-3018. The examiner can normally be reached on Monday to Friday 9:30am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leslie Wong
Patent Examiner
Art Unit 2177

LW
September 30, 2004